ANNEX B

COMUNICATIONS & WARNING

I. PURPOSE

The ability of Christian County to direct their emergency forces through adequate communications is essential to effective operations in an emergency. Since emergencies can threaten life and property, it is essential to have an effective method of alerting key personnel and warning the public. Although communications and warning systems already are in use in Christian County, it is necessary to plan for the effective use of these resources during an emergency situation. This annex is developed to provide information and guidance concerning available, and potentially available, communications and warning capabilities in Christian County and the best way they can be augmented.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Christian County receives initial warning from the NAWAS point and the MULES terminal located in the E-911 Dispatch Center in the Christian County Judicial Facility. Warning information is also received from the National Weather Service office in Springfield, the Missouri State Highway Patrol, Troop D, Springfield and the DTN Satellite System installed in the E-911 Center.

2. The primary communications and warning capabilities for Christian County are in the E-911 Dispatch Center. Communications and warning in the municipalities is provided through their police departments and/or fire services. Communications frequencies for Christian County are kept on file in both the E-911 Dispatch Center and at the various Police, Fire and Emergency Medical Services Stations throughout the county.

3. Christian County E-911 is staffed 24 hours a day and maintains a central dispatch which covers all of Christian County and the municipalities except for the City of Nixa and the Nixa Fire Protection District which have their own 911 system. Christian County E-911 provides dispatching for each Fire District, Police Department, except for Nixa Police and Nixa Fire Protection District. They have their own 24-hour dispatch center.

4. The City of Ozark maintains a radio base station at City Hall in the Police Department. The City also has a cable alert capability in which a warning/message can be broadcast over cable television.

5. The City of Clever maintains a radio base station in City Hall. A pager tone-alert system is available on the base station and can page emergency services. The base station has 3 frequencies (Police Mutual Aid, Statewide Sheriff, and Clever

Private).

6. The communities of Ozark, Nixa, Billings, Clever, Sparta, Chadwick, and Highlandville have personnel trained as weather spotters through their fire departments, rescues agencies and emergency management agencies.

7. The Christian County Amateur Radio Emergency System and HAM radio organizations are available in Christian County. A HAM radio network is available in the County. Two repeaters are located in County. HAM Radio operators also serve as weather spotters.

8. The City of Ozark has 8 outdoor warning sirens, the City of Nixa has 6 sirens, Nixa Fire Protection District has 8 Sirens, and the cities of Billings, Sparta and Clever each have one outdoor siren. These warning devices are activated by the police and fire departments in their respective cities, and tested approximately 3-4 times each year. There are no outdoor warning devices in the rural parts of Christian County. The County Sheriff would spread warning to these areas with assistance from Police Departments and/or Fire Departments by using car sirens, bullhorns and/or going door to door.

9. The County Sheriff's Office, with assistance from the City Police Departments, and the City and Rural Fire Departments can provide warning notification to special facilities out in the county by telephone, in person, through the EAS system, internet, or NOAA Weather Alert Radios.

10. Communications for Christian County are found primarily in the E-911 Dispatch Center, the City Police Departments, Christian Ambulance Service, and the Fire Stations. Most of the response personnel in these agencies also have radios and pagers in their vehicles.

11. The County Emergency Management Director has the ability to activate the EAS System. A copy of the procedures is kept on file in the EOC.

12. The primary EAS radio station for Christian County is KTTS 1260/AM 94.7 in Springfield. The primary EAS television stations are KSPR, Channel 33; KOLR, Channel 10; KYTV, Channel 3; KTOZ, Channel 21; and KDEB, Channel 27, all located in Springfield.

B. Assumptions

1. It is assumed that the existing communications in Christian County will survive and remain functional regardless of which type of disaster strikes the area. (The exception, however, is nuclear attack, which would require actions to insure survivability.)

2. HAM and other amateur radio operators will be available to assist during an emergency situation. HAM radio operators will have a representative respond to the EOC with communications equipment.

3. If local communications become overtaxed, the state will be able to augment local resources during the response and recovery phases.

4. Regardless of how well developed a warning system is, some citizens will ignore, not hear, or not understand warnings of impending disasters broadcast over radio or television, or sounded by local siren systems. Mobile public address and even door-to-door operations may be required in some disaster situations.

5. If the 911 system becomes inoperable, 911 calls originating from the Christian County's service area will be transferred to Taney County Central dispatch. Taney County will then contact Christian County by radio and advise them of the situation.

6. If Nixa's 911 system becomes inoperable, 911 calls are automatically transferred to Greene County's 911dispatch center. Nixa will then be notified by radio of the situation.

III CONCEPT OF OPERATIONS

A. General

1. The communications and warning operations for Christian County will be controlled by Christian County E-911. The communications and warning operations for Nixa E-911 district will be controlled by the Nixa E-911. Work shifts will be established to provide a 24-hour a day staffing of the communication facilities during emergencies.

2. Each municipality will control communications and warning operations within their jurisdiction to the extent possible. Those areas of the county that do not have adequate emergency communications and warning capabilities will be provided for by Christian County E-911.

3. The communications centers (dispatching personnel) in conjunction with the Incident Commander on the scene will make the initial determination that a "classified" emergency has occurred or is developing (See Appendix 3 to the Basic Plan).

4. During emergency operations, all departments will maintain their existing equipment and procedures for communicating with their field operations. They will keep the EOC informed of their operations at all times and will maintain communications liaison with the EOC.

5. Communications between the state and local EOC will be primarily through landline telephone links or cellular phones.

6. Communication systems may become overloaded during emergency situations. Communications will be expanded by augmenting telephone services (implement line load control, prioritize service restoration, etc.) and utilizing amateur radio communication networks (i.e., HAM radio operators).

7. Measures must be taken to secure and protect communication equipment from the possible destruction from various hazards: lightning and wind.

8. Although most warning alerts come from outside sources (i.e., State, National Weather Service, etc.), Christian County and the municipalities will develop and maintain the capability to identify potential problems and insure a timely warning on its own (i.e., weather spotters, HAM radio weather network).

9. When emergency situations requiring public warning occur at industrial sites that have hazardous materials, or at water impoundments, the procedures for alerting government officials will follow the procedures contained in Appendix 3 to the Basic Plan (also see Annex H).

10. When an emergency situation occurs, all available systems will be used to alert and warn the public (private residences, schools, nursing homes, the hospital, etc.) Methods of warning include: tone alert monitors, outdoor warning sirens, and broadcast over radio/television stations, NOAA Weather Alert Radio, and the internet. Tests and educational programs will be conducted regularly to insure the public understands the various warnings.

B. Actions to be Taken by Operating Time Frames

1. Mitigation

a. Revise and update this Annex and its Appendices at least yearly.

b. Conduct training for personnel (full-time, part-time, auxiliary) in:

i. Weather spotting

ii. Message flow when the EOC is activated

iii. Emergency classification

iv. Damage assessment

v. Activation procedures of warning systems

c. Participate in tests, exercises and NIMS Training.

d. Inspect and maintain all equipment regularly.

e. Ensure radio equipment is programmed with relevant frequencies (interop channels).

f. Identify private sector resources that can augment local resources/capabilities.

g. Determine methods to safeguard equipment from possible hazards.

h. Coordinate communications and neighboring jurisdictions.

h. Insure that a repair capability exists under emergency conditions.

i. Develop back-up procedures should equipment fail.

j. Develop procedures to warn and/or communicate information to special needs groups (hearing impaired persons, persons with visual impairments, non-English speaking groups, etc.).

2. Preparedness

a. Initiate personnel call-up as necessary, based on the potential of the situation.

b. Activate appropriate warning Systems.

c. Run equipment readiness checks, including emergency power.

d. Activate alternate systems and procedures, if necessary.

e. Provide communications for the EOC.

f. Check communications links with state and federal agencies.

g. Prepare to move to the alternate EOC or nearest safe location if necessary.

3. Response

a. Activate warning system, if not already done.

b. Activate all necessary personnel to meet communications needs.

c. Provide communications support for response personnel on the scene.

d. Make the emergency classification.

e. Keep EOC staff informed of the status of communications and warming systems.

f. Make necessary repairs.

4. Recovery

a. Continue "response" level operations until told to discontinue operations.

b. Provide communication support to Damage Assessment.

F. Make repairs and inventory equipment and supplies. Report status to EOC staff.

a. Participate in after-action reports and critiques.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. The organizational chart for the communications and warning function in Christian County is provided in Appendix 1 to this Annex.

B. Assignment of Responsibilities

1. Overall coordination and control of communications and warning in Christian County is the responsibility of Christian County E-911 with cooperation of the Nixa E-911. The Nixa Fire Department and Nixa Police Department will be under the control of the Nixa E-911. Coordination between the two 911 districts is of the utmost importance. Open lines of communication should be maintained to ensure timely, accurate and coordinated warnings.

2. Those areas of the county that do not have sufficient communications and warning capabilities will be provided for by Christian County E-911

V. DIRECTION AND CONTROL

A. Christian County E-911 will coordinate communications and warning activities for Christian County. The Nixa E-911 will support this function in relation to their respective district. The County Commission, the City Police and Fire Departments will also support Christian County E-911.

B. The City Police Departments will coordinate Communications and Warning activities for the municipalities. Communications and warning for the City of Ozark is the joint responsibility of the Police Chief and the Emergency Management Director.

C. Fire Departments/Districts will assist with warning through weather spotting operations, sirens on vehicles, mobile public address methods, etc.

D. The EOC will operate in shifts to provide continuous 24-hour operations, including communications and warning capabilities.

E. Outside communications and warning resources used to support emergency operations will remain under the direct control of the sponsoring organization, but will be assigned by the EOC to respond as necessary.

F. It is the responsibility of each agency to insure that their personnel are adequately trained and familiar with communications and warning procedures as outlined in this Plan and the agency's own SOP.

G. Notification/recall lists for all departments to include each individual in the chain of command will be updated regularly and provided to the Christian County E-911, Nixa E-911 and the Christian County Emergency Management Agency (and/or appropriate city dispatcher). This list should include telephone numbers and radio frequencies of neighboring jurisdictions and state agencies. A communication system to implement call-down rosters for personnel assigned to the EOC, etc., must also be maintained.

VI. CONTINUITY OF GOVERNMENT

A. Lines of succession to each department head and other key personnel positions shall be according to the procedures and normal lines of succession established in the respective departments SOP's attached to this annex. The line of succession for the Christian County E-911 is as follows:

1. Director of Communication

2. Shift supervisors

B. In the event the primary communications and warning facilities become inoperable, SOPs should be developed to provide for backup equipment or an alternate facility.

C. All records vital to the continued functioning of the communications and warning section should be duplicated and maintained at another location. If this is not possible, plans should be developed to move documents to an alternate site.

VII. ADMINISTRATION & LOGISTICS

A. Administration

1. Maintain mutual aid agreements and agreements of understanding regarding communications and warning operations.

2. Notification/recall lists for all departments to include each individual in the chain of command will be updated regularly and provided to the Christian County E-911, Nixa E-911 and the Christian County Emergency Management Agency (and/or appropriate city dispatcher). This list should include telephone numbers and radio frequencies of neighboring jurisdictions and state agencies. A communication system to implement call-down rosters for personnel assigned to the EOC, etc., must also be maintained.

3. It is the responsibility of each agency to insure that their personnel are adequately trained and familiar with communications and warning procedures as outlined in this Plan and the agencies' own SOG.

4. Record keeping and accounting procedures will be according to appropriate county/city regulations, ordinances, etc.

B. Logistics

1. SOGs for the security and protection of communication equipment will be developed for the following:

a. Protection from lightning and wind.

b. Overload (telephone)

(1) Line-load control

(2) Priority of service restoration

2. Requisition & Supply (See Resource and Supply, Annex G)

VIII. ANNEX DEVELOPMENT AND MAINTENANCE

The Emergency Management Director(s) will be responsible for the maintenance and improvement of this annex. It will be reviewed, updated, and modified as necessary, but not less than annually.

APPENDICES

Appendix 1: Christian County Communications Diagram

Appendix 2: Warning Systems

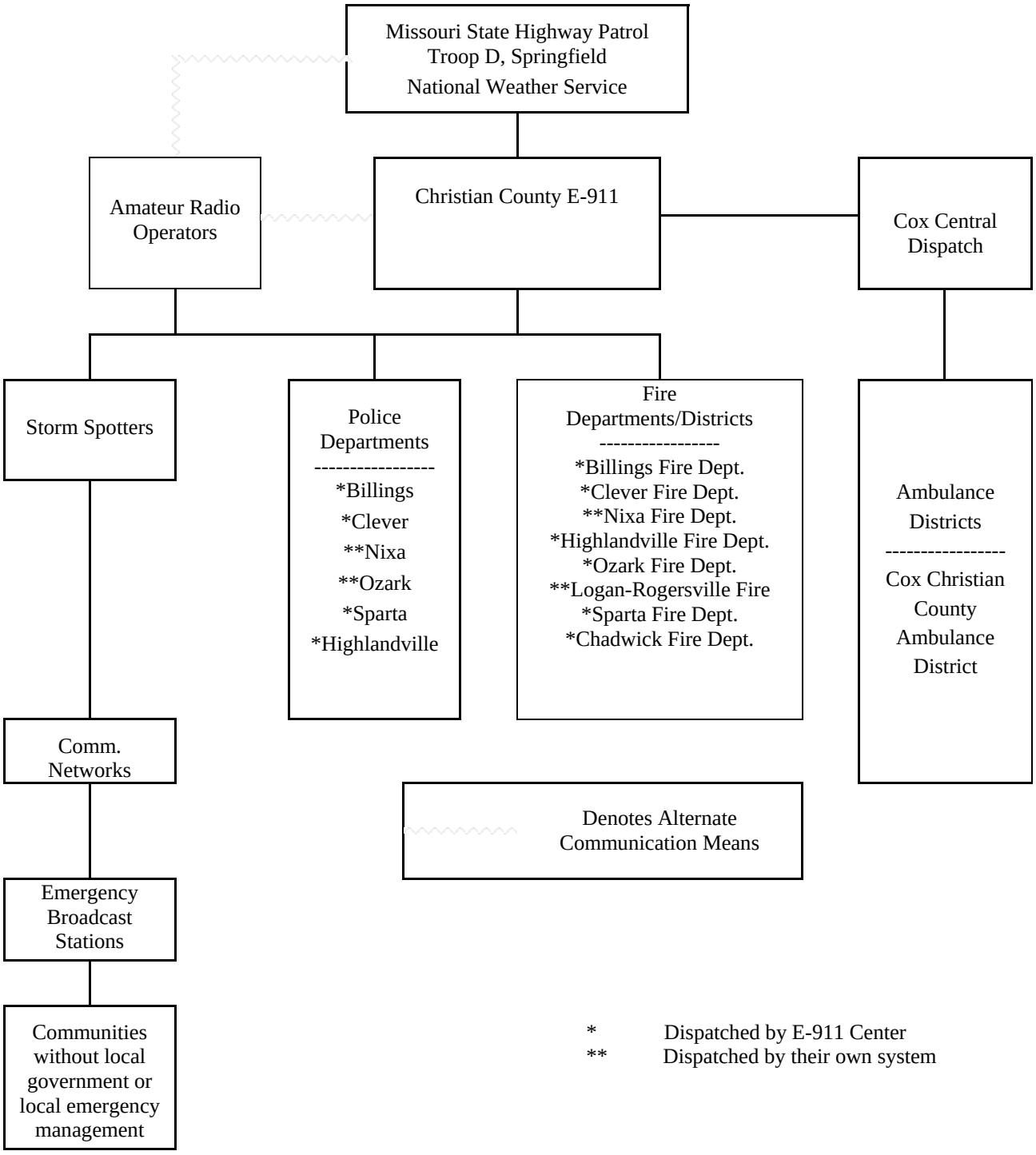
Appendix 3: Amateur Radio Service Plan

Appendix 4: Severe Weather Plan

Appendix 5: Communications Interoperability Plan

Appendix 1 to Annex B

CHRISTIAN COUNTY COMMUNICATIONS DIAGRAM



Appendix 2
Warning Systems

A. Outdoor Warning Sirens

1. Ozark has five outdoor warning sirens which are activated by radio tone through the City Emergency Management Director, Assistant Emergency Management Director, City Police and City Administrator. The sires are activated for weather warnings. Sirens can be activated inside Ozark Fire Station #1 individually or all at once. They are test quarterly. See Book II for siren locations and activation procedures.

2. The City of Nixa has six outdoor warning sirens. Each siren has warning and public address capabilities. The sirens are activated through the Police Department. Each siren can be activated individually. See Book II for siren locations and activation procedures.

3. Nixa Fire Protection District has eight outdoor warning sirens. The sirens are activated through the Police and Fire Department. The sirens are tested regularly. See Book II for siren locations and activation procedures.

4. Billings has one outdoor warning siren. It is activated by the Police or Fire Department and tested regularly. See Book II for siren location and activation procedures.

5. Clever has one outdoor warning siren. It is activated by the Police Chief, Fire Chief or county EMA Director. It is tested regularly. See Book II for siren location and activation procedures.

6. Sparta has one outdoor warning siren. It is activated by the Police Chief, Fire Chief or the county EMA Director. It is tested regularly. See Book II for siren location and activation procedures.

B. Weather Spotters

The communities of Ozark, Nixa, Billings, Clever, Sparta, Chadwick and Highlandville have weather spotters available through their fire departments and emergency management agencies to monitor severe weather situations in their respective districts. The spotters are stationed at designated locations in their area to monitor and report the weather conditions. Each district follows guidelines set forth by the National Weather Service regarding reporting procedures. Each district uses their private channel radio frequency for fire ground communication. Spotters relay reports to an Incident Commander. The Incident Commander then relays severe reports to Christian County E-911 Dispatch, the Emergency Management Director or the National Weather Service .*See Weather Spotters Procedures Appendix 4 to Annex B.*

C. Missouri Uniform Law Enforcement System (MULES)

MULES is a law enforcement computer data network used by the Missouri Patrol primarily for law enforcement operations. It is also used to disseminate emergency information such as weather conditions, flood stages, road conditions, etc. A MULES terminal is located in the Christian County Sheriff's Department and the Nixa Police Department.

D. Emergency Alert System (EAS)

1. Christian County is one of thirteen counties located in the Springfield EAS Operational Area. The primary Common Program Control Station (CPCS) for this area is radio station KTTS AM-l26O/FM-94.7, Springfield.

2. The primary EAS television stations for Christian County are:

   a. KDEB-TV, Channel 27, Springfield

   b. KOLR-TV, Channel 10, Springfield

   c. KYTV-TV, Channel 3, Springfield

   d. KSPR-TV, Channel 33, Springfield

   e. KOZK-TV, Channel 21, Springfield

3. Activation of EAS
   See the Response Section in the Incident Management Guide

E. NOAA W.A.R

During a weather related emergency the National Weather Service will activate their Weather Alert Radio system. This system is assessable to all person with a W.A.R. receiver. The National Weather Service will give storm and shelter information for a specific area that will be affected by the storm. NOAA Weather Alert Radios may also be used for Civil Emergency Messages (CEM).

F. Internet Resources

There are several emergency tracking systems available to the public on the internet.

Appendix 3

Appendix 4
Radio Amateur Civil Emergency Services (RACES)

I. Introduction.

a. Scope. This plan provides guidance for the Radio Amateur Civil Emergency Service (RACES) to support local government officials during certain emergency conditions.

b. Purpose. This plan is intended to provide coordinated operation between Christian County government officials and the RACES organization during times when there are extraordinary threats to the safety of life and/or property. Maximum benefits from a RACES organization can be obtained only through careful planning which identifies the organizations, agencies, and individuals concerned and assign a definitive role to each. This plan enables agencies and organizations having emergency responsibilities to include the RACES organization in local emergency plans and programs.

c. Operations. This plan becomes official for Christian County when signed by the Director of Emergency Management; Regional Coordinator for the State Emergency Management; and authorized RACES representatives. Under this plan, the Director of Emergency Management is empowered to request the use of Available volunteer communications facilities and personnel. Acceptance of or participation in this plan shall not be deemed as a relinquishment of license control, and shall not be deemed to prohibit an amateur radio service licensee or broadcast licensee from exercising independent discretion and responsibility in any given situation under the terms of its license.

II. Authority. Part 97 Subpart A, Federal Communications Commission Rules and Regulations.

III. Authentication. The form of authentication that will be used between the activating official and the RACES organization is personal identification or knowledge of the individuals involved.

IV. Identification. The methods used to identify a RACES member and key personnel during a communications support operation are the following:

a. Local Emergency Services Identification Card, and

b. Personal Acquaintance.

V. Implementation Procedures.

a. Procedures for Government Officials. Upon notification or determination of an emergency condition or situation posing an extraordinary threat to life and/or property, Christian County Emergency Management will contact the RACES Liaison Officer.

b. The Director of Emergency Management will use the following format when contacting the RACES Liaison Officer:

i. "This is Phil Amtower, Director of Christian County Emergency Management Agency. I request that the RACES organization be activated for (area or city) because of (description of emergency situation)."

ii. In order to speed personnel activation during emergency conditions or provide other announcements, an authorized official may contact the Southwest Missouri Operational Area- emergency broadcast system station and request that a public service announcement be made to assist activation of the RACES organization.

iii. Upon request of the emergency condition, appropriate government officials will issue a termination notice.

VI. Procedures for Amateur Radio Operators. Upon request by authorized authorities, the designated RACES member(s) will report to the EOC and activate the required emergency nets using the frequencies below:

Shelter net	146.775
Evacuation net	145.230
Hospital net	145.190

VII. RACES members missing a designated assignment by the EOC network control are encouraged to check in at any time.

a. In the event that assistance is offered by amateurs not living within the immediate area, amateurs will contact the EOC on the previously listed simplex frequencies or locally used repeater frequencies for assignment and dispatch.

b. At the cessation of the emergency, authorized officials initiate roll call from the EOC using any one or more of the previously listed simplex frequencies and local repeater frequencies. RACES members will then acknowledge and confirm receipt of termination message.

VIII. Tests. Tests of the system include:

a. One test per month of the RACES organization.

b. Annual emergency exercises.

Appendix 4 to Annex B

Severe Weather Plan

I PURPOSE

The ability of Christian County to warn the residents of severe weather threats is essential to saving lives and protecting property. Since severe weather can threaten life and property, it is essential to have an effective method of alerting key personnel and warning the public. This annex is developed to provide information and guidance concerning severe weather spotting procedures, alerting the public and the initial response in the event that extensive damage has occurred due to severe weather.

II. SITUATION AND ASSUMPTIONS

A. Situation

10. Christian County has the ability to receive warning information from the following:
    a. MULES terminal located in the E-911 Dispatch Center in the Christian County Judicial Facility and Nixa E-911 dispatch center.
    b. National Weather Service office in Springfield by phone
    c. Missouri State Highway Patrol, Troop D by phone and radio
    d. Baron XM Satellite System installed in the Christian County 911 and EOC.
    e. EMWIN Satellite system installed in the Christian County 911 and EOC.
    f. NOAA Weather Alert Radio in the Christian County 911 and EOC.
    g. InterWarn/Storm Ready Internet service.
    h. Various public and private internet warning services.
    i. Radio and Television stations.
    j. Amateur Radio equipment in the EOC.

11. The primary communications and warning capabilities for Christian County are in the E-911 Dispatch Center. Communications and warning in the municipalities is provided through their police departments and/or fire services. Communications frequencies for Christian County are kept on file in both the E-911 Dispatch Center and at the various Police, Fire and Emergency Medical Services Stations throughout the county.

12. Christian County E-911 is staffed 24 hours a day and maintains a central dispatch which covers all of Christian County and the municipalities except for the City of Nixa and the Nixa Fire Protection District which have their own 911 system. Christian County E-911 provides dispatching for each Fire District, Police Department, except for Nixa Police and Nixa Fire Protection District. They have their own 24-hour dispatch center.

13. The communities of Ozark, Nixa, Billings, Clever, Sparta, Chadwick, and Highlandville have personnel trained as weather spotters through their fire departments, rescues agencies and emergency management agencies.

14. The Christian County Amateur Radio Emergency System and HAM radio organizations are available in Christian County. A HAM radio network is available in the County. Two repeaters are located in County. HAM Radio operators also serve as weather spotters

15. The City of Ozark has 8 outdoor warning sirens, the City of Nixa has 6 sirens, Nixa Fire Protection District has 8 Sirens, and the cities of Billings, Sparta and Clever each have one outdoor siren. These warning devices are activated by the police and fire departments in their respective cities, and tested approximately 3-4 times each year. With the exception of the Nixa Fire District, there are no other outdoor warning devices in the rural parts of Christian County. The County Sheriff would spread warning to these areas with assistance from Police Departments and/or Fire Departments by using car sirens, bullhorns and/or going door to door. All Christian County residents are urged to purchase NOAA Weather Alert Radios to augment the warning process. Campaigns for NOAA Weather Alert Radios should be implemented to raise awareness of the importance of weather alert radios.

16. The County Sheriff's Office, with assistance from the City Police Departments, and the City and Rural Fire Departments can provide warning notification to special facilities out in the county by telephone, in person, through the EAS system, internet, or NOAA Weather Alert Radios.

17. The County Emergency Management Director has the ability to activate the EAS System. A copy of the procedures is kept on file in the EOC.

18. The primary EAS radio station for Christian County is KTTS 1260/AM 94.7 in Springfield. The primary EAS television stations are KSPR, Channel 33; KOLR, Channel 10; KYTV, Channel 3; KTOZ, Channel 21; and KDEB, Channel 27, all located in Springfield.

III CONCEPT OF OPERATIONS

B. General

1. When a severe weather situation occurs, all available systems will be used to alert and warn the public (private residences, schools, nursing homes, the hospital, etc.) Methods of warning include: tone alert monitors, outdoor warning sirens, and broadcast over radio/television stations, NOAA Weather Alert Radio, and the internet. Tests and educational programs will be conducted regularly to insure the public understands the various warnings

2. Communication systems may become overloaded during emergency situations. Communications will be expanded by augmenting telephone services (implement line load control, prioritize service restoration, etc.) and utilizing amateur radio communication networks (i.e., HAM radio operators).

3. The communications and warning operations for Christian County will be controlled by Christian County E-911. The communications and warning operations for Nixa E-911 district will be controlled by the Nixa E-911.

4. Hazardous Weather Outlooks are formulated by the National Weather Service daily at 6:00 am and 1:00 pm. Additional outlooks are posted at 8:00 pm should the threat of overnight storms become a possibility. These outlooks are designed to advise departments of impending severe weather. Department heads should monitor these reports to keep apprised of potentially hazardous weather.

5. Activation of Spotters

   a. The determination to activate Spotters can and may come from several sources. The Emergency Management Director(s), county/city dispatch centers, advice from the National Weather Service or Fire District Chief.
   b. Occasionally, the National Weather Service will contact dispatch centers to advise them to alert spotters. Therefore, the responsibility to activate spotters or not to activate spotters must be made by local officials.
   c. If there are any questions or concerns whether or not to activate spotters, the National Weather Service should be contacted at 1-800-762-4363.
   d. The National Weather Services web page offers a spotter activation section that can aid in the activation determination at www.crh.noaa.sgf
   e. Sometimes warning can come within minutes of an impending storm. Therefore, Emergency Managers, dispatch agencies, department heads should be prepared to activate spotters based on storm development, warnings and or reports from other spotters in "upstream" counties.

C. Actions to be Taken by Operating Time Frame

1. Mitigation

   a. Conduct training for personnel (full-time, part-time, auxiliary) in:
      i. Weather spotting
      ii. Message flow when the EOC is activated
      iii. Emergency classification
      iv. Damage assessment
      v. Activation procedures of warning system
   c. Participate in tests and exercises.
   d. Inspect and maintain all equipment regularly.
   e. Identify private sector resources that can augment local resources/capabilities.

f. Determine methods to safeguard equipment from possible hazards.

g. Coordinate communications and neighboring jurisdictions.

k. Insure that a repair capability exists under emergency conditions.

l. Develop back-up procedures should equipment fail.

h. Develop procedures to warn and/or communicate information to special needs groups (hearing impaired persons, persons with visual impairments, non-English speaking groups, etc.

7. Preparedness

a. **Severe Thunderstorm Watch** Definition: A severe thunderstorm watch means that conditions are favorable for the development of thunderstorms within the watch area. (see Severe Thunderstorm definition in appendix 9)

i. Actions to be Taken:

1. Christian County Emergency Management will send out Hazardous Weather Statements from the National Weather Service to area departments by fax or E-mail in advance of the potential severe weather conditions
2. However, Emergency Managers, Fire Chiefs, and other emergency related officials should keep aware of changing weather conditions.

b. **Tornado Watch** Definition: A tornado watch means that conditions are favorable for the development of tornados within the watch area.

i. Actions to Be Taken:

1. Christian County Emergency Management notifies area departments by fax or E-mail of the tornado watch.
2. Both E-911 dispatch centers will page area departments advising them of the Tornado Watch.
3. All Department Heads and Emergency Managers should be on a heightened state of awareness and monitor weather radio or other weather source for announcements.

c. Initiate personnel call-up as necessary, based on the potential of the situation.

d. Run equipment readiness checks

8. **Response.** Below is a general procedure for activating spotters. This is a GENERAL procedure and may be altered as deemed necessary. Each storm and or warning is different in nature and some judgment is needed in dealing with each unique situation.

    b. General Activation Procedures:
        i. The County Emergency Manager will normally be the requesting agency to activate spotters. However, each city Emergency Management Director or the Dispatcher on duty can request spotter activation for their jurisdiction.
        ii. In the absence of the County EMA Director, Nixa and Ozark City EMA Directors will advise the dispatching agencies on whether or not to activate spotters.
        iii. A determination will be made by the EMA Director on which agencies to activate.
        iv. Each dispatching agency (911) will also have the ability to activate spotters in the absence of the EMA Director(s) based on warning information, National Weather Service advise, upstream damage reports.
        v. After activation, each department will advise the dispatching agency of the Level they intend to implement. (further explained below)
        vi. Each agency will utilize the Incident Management System.

    c. **Severe Thunderstorm Warning *with no* Tornado Watch** Definition: A severe thunderstorm is approaching our area. Weather Service has determined that this storm is severe with damaging winds and large hail. Even if there has not been a tornado watch issued, this storm could cause damage to residents and business.

        i. Actions to Be Taken:

            1. The National Weather Service occasionally contacts Christian County E-911 or the Emergency Management Director and requests weather spotters to be activated in this instance. If not, activating Weather Spotters without a Tornado Watch is usually a judgment call. A lot depends on the type of storm, time of the year, etc. If the Weather Service advises or Emergency Manager deems necessary, Christian County E-911 will dispatch area departments and advise them of the Severe Thunderstorm Warning. Information will be given about the storm as well as any other related warnings or watches (i.e. tornado warning). This information needs to be relayed to Nixa E-911.

2. If spotter activation is deemed unnecessary, dispatch agencies should still advise all departments of the Severe Thunderstorm Warning.

3. At this point, the senior officer should advise his or her department of the Level of Response that is to be taken. This is a decision of the individual departments and E-911 dispatchers will not make that determination. However, they may make a recommendation based on contact with the National Weather Service and radar information received in the dispatch center. Normally, this will be a Level 1 response.
4. Notify the dispatch agency that IC is established and that spotters are at their posts and relay what level of response you will be taken.

5. **Community Warning Sirens:** Usually no outside siren activation in needed. However, some Severe Thunderstorms can and have caused as much or more damage that an actual tornado touchdown. The storm may be severe enough to warrant the use of the sirens even though a Tornado Warning has not been issued. Siren activation at this point is up to each individual community. The decision to sound the warning sirens should be a joint decision between the Fire Department IC, the Police Department officer, Emergency Management Director and the Mayor. If the mayor chooses not to respond to these types of incidents, that authority may be delegated.

b. **Severe Thunderstorm Warning *with* a Tornado Watch** Definition: Definition: A severe thunderstorm is approaching our area. Weather Service has determined that this storm is severe with damaging winds and large hail and has the potential to produce tornados.

i. Actions to be Taken:

1. Both E-911 dispatch agencies will dispatch area departments for Weather Spotting and advise them of the Severe Thunderstorm Warning. Information will be given about the storm as well as any other related warnings or watches (i.e. flood warning, Tornado Watch).

2. At this point, the senior officer should advise his or her department of the Level of Response that is to be taken. This is a decision of the individual departments and E-911 dispatchers will not make that determination. However, they may make a recommendation based on contact with the National Weather Service and radar information received in the dispatch center. Normally, this will be a Level 2 response

3. Notify the E-911 dispatch center that IC is established and that spotters are at their posts and relay what level of response you will be taken.

4. Community Warning Sirens: Siren activation is up to the individual community. A severe thunderstorm warning with a tornado watch is a potentially dangerous situation. A more liberal approach to warning the citizens should be exercised. At this point, a tornado could be produced by the storm at any time.

5. **Communities should take into consideration that it may be necessary to activate local sirens when wind speeds are in excess of 75 mph with out a Tornado being present. Straight line winds at these speeds cause as much damage as an F1 tornado.** The general public should be made aware of this procedure.

c. **Tornado Warning** Definition: The National Weather Service has issued a tornado warning for a particular area. Departments should already be at their posts at this time. Tornado warnings can be issued from several different sources.

- Weather Service sees rotation on Dopler Radar.
- Weather Service gets a report from a trained Weather Spotter.
- Reports of damage, actual sightings from citizens.
- Or a combination of all the above.

i. Actions to be Taken:

1. The E-911 Dispatch will advise all departments of the Tornado Warning via normal paging procedures. The other E-911 dispatch agency will also be notified and the various departments notified.

2. Departments sound warning sirens per department protocol.

3. IC will notify spotters of the Tornado Warning.

4. Spotters posted at assembly areas (schools-nursing homes) will notify facility supervisors of the Tornado Warning.

5. Departments and facilities execute their normal Tornado Drill Procedures.

6. In the event that large scale damage occurs, refer to the General Guidelines for Fire Department Disaster Operations Handbook.

7. Community Warning Sirens: Again, siren activation is up to the individual community. Sirens should be activated if the storm is in close proximity to the affected community or if the community is in the path of the tornado. **NOTE**: If the tornado is in Southeastern Christian County, Clever and Billings may have no reason to sound warning sirens. Many things need to be kept in consideration, for example: A citizen in Clever may be traveling to Nixa. Clever is not in the path of the storm, but Nixa is. Sounding the siren in Clever may alert that individual that there is danger ahead. No city has ever come under scrutiny for warning persons to early or too often. But they have for no warning at all. Error on the side of caution. These policies should be prepared, kept up to date and made known to all individuals necessary.
8. **All Clear Signal:** An all clear signal should be transmitted by the dispatch centers after the threat of the storm is passed. This should be on a department by department basis. As is some instances, not all departments will be in the clear. This all clear determination should come from several different sources, i.e. Weather Service, spotters, etc. The Incident Commander, Emergency Manager should agree whether an all clear should be given. At which time the Incident Commander of each department thinks his/her department is in the clear, the dispatch center/EMA Director should be contacted and a determination made.

d. **Levels of Response**

i. **Level 1.** Generally, a Level 1 Response should be issued for minor storms, thunderstorm warnings without a tornado watch and other related weather events that may require a limited response. At this Level of response, the approaching storm is not expected to spawn tornados. The primary objective is to monitor the storm and be prepared in case it reaches severe limits. Although many storms have been considered moderate in nature, they have also reached severe limits and spawned tornados very quickly. The main goal here is to have a limited amount of personnel on high alert in case they are needed at a seconds notice. Each department should establish its own written procedures for placing spotters, vehicles to be used, radio frequencies used, etc.

1. **Procedures for Level 1 Response**
   a. A department officer will establish Incident Command and an Incident Command Post. Usually this will be set up at the Fire Station or City Hall.

b. The IC will announce command and notify E-911 dispatch that they are initiating a Level 1 Response.

c. The senior officer on duty of the community's Police Department should respond to the IC post also. If he/she cannot attend, close radio contact should be maintained.

d. Place personnel at pre-determined post throughout your district. Only a limited number of personnel placed at strategic places are needed for this level of response.

e. Department IC should monitor Weather Alert Radio, TV, Radio or any other means available to keep abreast on weather conditions.

f. One person should be near the warning siren activation point.

g. Storm reports should be relayed from spotters to the Incident Commander via Departments Private frequency if available. Radio traffic should be kept at a minimum. The Incident Commander shall be the ONLY one to talk to E-911 dispatch.

h. The Incident Commander will relay pertinent information to E-911 dispatch.

i. With this type of storm and level of response, every type of severe information should be relayed to the IC. Hail, damaging winds, etc. These types of reports may indicate that the storm is increasing in intensity.

j. The incident commander will be charged with what types of reports to relay to the E-911 center and/or the National Weather Service.

ii. **Level 2.** Generally, a Level 2 Response should be issued for a severe thunderstorm warning in conjunction with a tornado watch or a very large thunderstorm that may produce very large hail and damaging winds.

1. **Procedures for a Level 2 Response**

a. A department officer will respond to and establish an Incident Command Post. Usually this will be set up at the Fire Station.

b. The IC will announce command and notify E-911 dispatch that they are initiating a Level 2 Response.

c. The senior officer on duty of the community's Police Department should either respond to the IC post or keep close radio contact with the IC.

d. Place personnel at pre-determined posts throughout your district. This should be a full response with all areas covered.

e. One person should be near the warning siren activation point.

f. Department IC should monitor Weather Alert Radio, TV, Radio or other means available to keep abreast on weather conditions.

g. Storm reports should be relayed from spotters to the Incident Commander via Departments Private frequency if available. Radio traffic should be kept at a minimum. The Incident Commander shall be the ONLY one to talk to E-911 dispatch.

h. Personnel should be posted at schools, nursing homes, and other large assembly areas. Persons responding to these areas should make contact with individual in charge and advise them of their presence. The purpose of this is to keep these areas abreast of weather conditions in the event that electric power is interrupted and these places have to means of communication. NOTE: Most schools and nursing homes have NOAA Weather-Alert Radios, but some do not. Those areas that do not have NWR should be identified and thus take precedence for spotter posts.

i. Each department should establish its own written procedures for placing spotters, vehicles to be used, radio frequencies used, etc.

j. In the event that large scale damage occurs, refer to the General Guidelines for Fire Department Disaster Operations Handbook.

k. Storm Shelters: A level 2 response may include the opening of Tornado Shelters. A procedure for opening shelters should be established and published. Opening Tornado Shelters should only be done *well in advance* so people can get to them in plenty of time before the storm hits. People traveling during a tornado are more at risk than if they stay at home. Stress having a plan at home as being the best strategy.

l. Christian County does not promote the use of Storm Shelters. Too many problems have been associated with this concept. Therefore, the public must be informed of this policy and each citizen should make an effort to identify places to shelter at home and at work.

e. Communications

i. Upon spotter activation, each department should assemble at their respective stations. There, an Incident Commander should be designated and that designation relayed to the dispatch center.

ii. Units should be dispatched or assigned to the pre-designated posts.

iii. Upon all posts being assigned, Incident Commander should notify dispatch that all spotters are at their posts.

iv. A communications plan should be developed by each department to ensure that traffic is kept to a minimum on main dispatch channels. Departments should utilize private or talk around channels to communicate within their agency.

v. Incident Commander should be the only person to communicate with the dispatch center.

vi. The Incident Commander should only relay pertinent information and pertinent storm related reports to the dispatch center. See section below for reporting procedures.

f. **Storm Reporting Procedures**

i. The Incident Commander should relay the following information to the dispatch center.

1. Hail greater than ½ inch
2. Rain greater that 1 inch per hour
3. Rotating Wall Cloud
4. Funnel Cloud
5. Tornado with/without debris
6. Wind greater that 50mph
7. Flooding, especially low water crossings
8. Damage to structures, trees, roads, power lines

ii. Each dispatch center, as well as the Emergency Managers, should relay storm reports to the National Weather Service. Using the criteria in the above section, reporter can be accomplished by phone, e-mail or the E-Spotter Program.

g. Spotter Post Locations

1. Each department should submit a spotter post location map to the Emergency Management Office to be kept on file.

2. If posts are changed, deleted or added, the Emergency Management Office should be updated.

h. Damage Occurs: Make a quick check of the following and notify the EOC of any problems.

1. Condition of Personnel, how many available?
2. Apparatus condition
3. Structure condition
4. Utilities
5. Telephone operation
6. Fuel
7. Pump Operation
8. Station security
9. Start a journal or log of activities for the first 24-hours. Keep the log on the apparatus.
10. Perform a Damage Assessment/Survey Report to the EOC.
11. Roads/streets that are open or closed (see street priority checklist Appendix 6).
12. Number of building fires.
13. Number of collapsed structures.
14. Critical facilities or target hazards.
15. Status of rest homes and nursing homes(see attachment V)
16. Condition of school sites, public and private(see attachment V)
17. Note: An officer from each Fire Department should be responsible for preparing current lists of target hazard/critical facilities that must be surveyed during the initial stage of an emergency.

9. Recovery

b. Participate in after-action reports and critiques.

c. Provide communication support to Damage Assessment

d. Make repairs and inventory equipment and supplies. Report status to EOC staff

ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. The organizational chart for the communications and warning function in Christian County is provided in Appendix 1 to this Annex.

B. Assignment of Responsibilities

b. Overall coordination of communications and warning in Christian County is the responsibility of Christian County E-911 and the Nixa E-911. The Nixa Fire Department and Nixa Police Department will be under the control of the Nixa E-911. Coordination between the two 911 districts is of the utmost importance. Open lines of communication should be maintained to ensure timely, accurate and coordinated warnings.

c. Each city will be responsible for activating warning sirens in their own district.

d. The County Emergency Management Director will assist in warning notifications.

e. Each department will be responsible for communications within their own agency.

f. Each department should develop a communication plan, spotter post locations and procedures for activating warning devices.

g. The County Emergency Management Director should keep local officials apprised of the potential for severe weather threats by utilizing the following:

i. Dissemination of the Hazardous Weather Outlooks by:
   1. Fax
   2. E-Mail
   3. Pager

ii. Dissemination of Warning Information by:
   1. Fax
   2. E-Mail
   3. Pager

h. Each department will compile damage assessment figures.

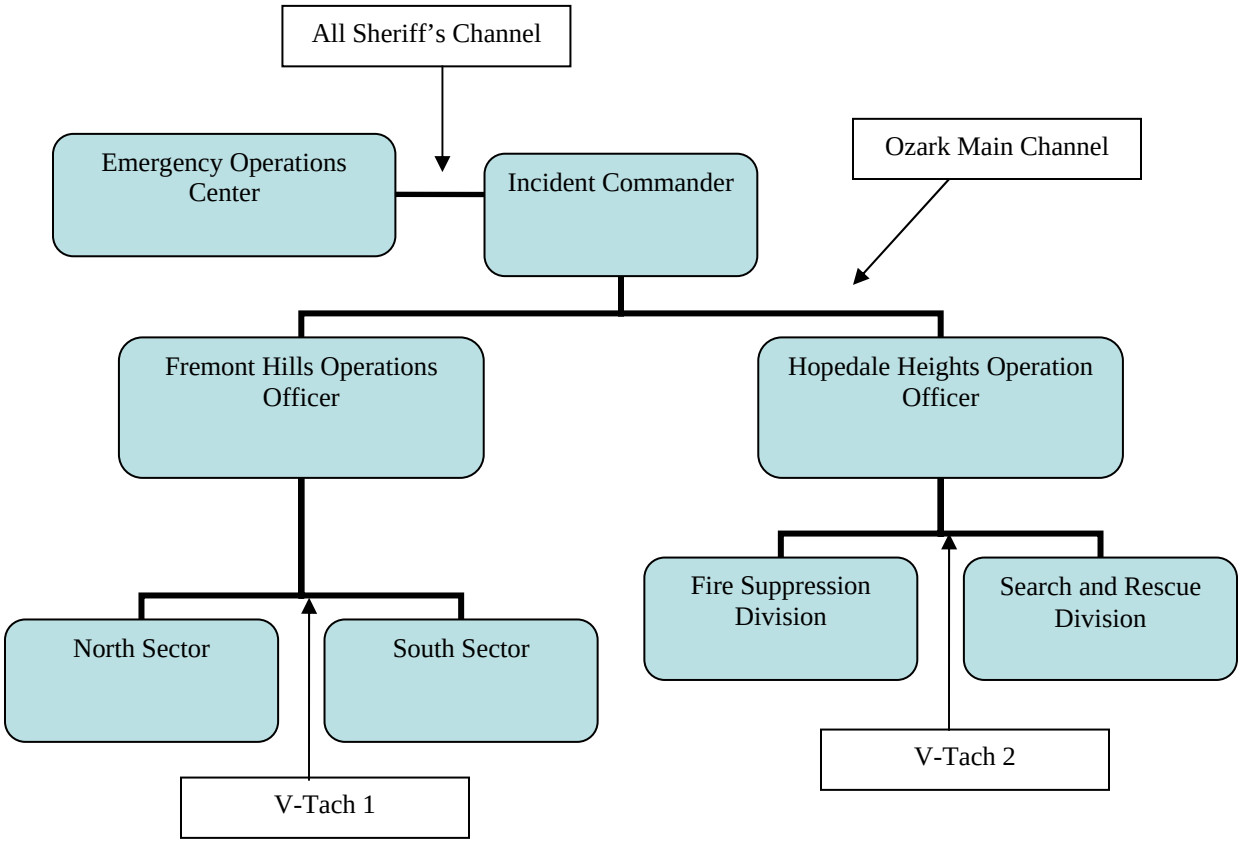
i. Each department will tabulate expenditure data for the emergency situation

Attachments

Attachment 1 ..... Communication Diagram
Attachment 2..... Fire Department Field Operations
Attachment 3..... Station Check List
Attachment 4..... Preliminary Survey Report
Attachment 5..... Mobilization and Assignment Chart
Attachment 6..... Street Priority Checklist
Attachment 7..... Nursing Homes/Schools Checklist
Attachment 8..... Damage Assessment Report Form
Attachment 9..... Glossary of terms – watch-warning definitions
Attachment 10..... Emergency Contacts

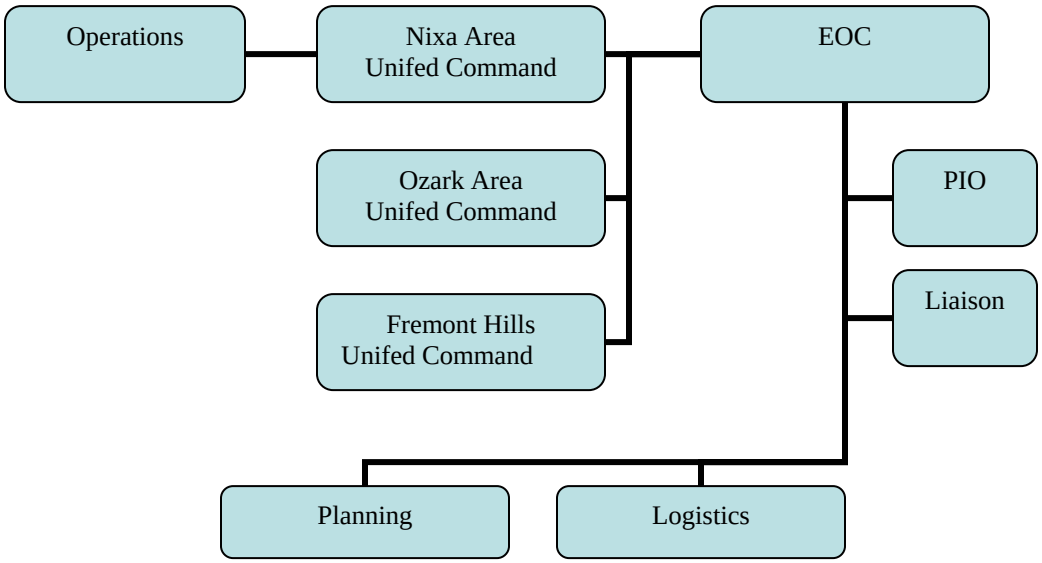
Suggested Additional Annexes for Individual Department Use:
Contacts
Resources
Equipment
Manpower
Vehicles
Shelter Locations
Siren Activation Procedures
Fire department personnel
Maps
Spotter Locations

Attachment 1
Communication Diagram



NOTE: Example Only

Sample large scale emergency organizational chart



Attachment 2

Fire Department Field Operations

1. Upon cessation of a tornado all company officers will survey the condition of personnel, apparatus and Fire Department structures and move apparatus and personnel from structures to open areas

2. Complete station checklist.

3. Preliminary Survey Report.

4. Street priority checklist.

5. Damage Assessment Report Form.

6. Nursing Home/Schools Status Checklist.

7. If communication with the Dispatcher is impossible, fire personnel will have to operate independently. Immediately establishing radio communications with the Dispatcher, Fire Department, and EOC is essential.
   a. The primary response will be fire suppression and rescue of victims in life threatening environments.
   b. If no immediate fire or rescues are obvious, companies will begin surveying their districts. They will also continue efforts to contact the Dispatcher.

8. The Incident Management System shall be used. No "Ten" codes. All field personnel shall utilize their fire department "private" radio channels if available. The only radio traffic on "main" channels will emanate from the Operations officers and Incident Commander to the EOC or Dispatch Center. Every effort should be made to keep clear main fire department dispatch channels. *See the Emergency Operations Plan-National Incident Management System.*

9. In the event of a large scale disaster, the site should be divided up in to sectors, groups, divisions. A Staging area for mutual aid companies should also be established. Each of these should operate on a different radio channel. In the example below, Hopedale Operations Officer would communicate with fire suppression on Ozark Private Channel. He would communicate with the Incident Commander on the same channel. The Incident Commander relays important information to the EOC on All Sheriff's Channel. Ideally, each branch would operate on a separate channel. But, due to lack of available frequencies and department constraints, this is impossible. Every effort should be made, however, to separate these divisions, groups and sectors to the best of our ability.

Attachment 3
Station Check List

Make a quick check of the following and notify the EOC of any problems.

1. Condition of Personnel, how many available?
2. Apparatus condition
   b. Damaged
   c. Movable
   d. Radios
3. Structure condition
4. Utilities
5. Telephone operation
6. Fuel
7. Pump Operation
8. Station security
9. Start a journal or log of activities for the first 24-hours. Keep the log on the apparatus

Attachment 4

Preliminary Survey Report

Make a Preliminary Damage Assessment or Survey Report for the EOC.

1. Roads/streets that are open or closed (see street priority checklist Attachment III).
2. Number of building fires.
3. Number of collapsed structures.
4. Critical facilities or target hazards.
5. Status of rest homes and nursing homes(see attachment V)
6. Condition of school sites, public and private(see attachment V)

Note: An officer from each Fire Department should be responsible for preparing current lists of target hazard/critical facilities that must be surveyed during the initial stage of an emergency.

Attachment 5
Mobilization and Assignment Chart
Command Staff and Suppression Personnel

Personnel	Mobilization Area	Assignments
Fire Chief	EOC	EOC
Ass't Chief	Fire Station	Operations
Safety Officer	Fire Station	Operations
Chaplain	Fire Station	Fire Station
Administrative Aide	EOC	Aide to Chief
Fire Suppression	Fire Station	Fire/Rescue

NOTE: Assignments may change and other duties assigned.

Possible assignments:

- Communications Center
- Emergency Operations Center
- Damage assessment
- Staging Area
- Nursing homes/Schools
- Transportation Duties
- Rehab
- Search and Rescue
- Traffic control
- Evacuation
- Site entry control
- Media Staging Area

Attachment 6

Street Priority Checklist

If there are no immediate fire or rescue problems, fire companies should begin to survey their assigned areas. This list of streets in intended to set up some pre-determined priorities. Any blockages or disruption of travel should be forwarded to the Incident Commander and the EOC.

A. Ozark
1. Jackson St.
2. 3rd Street
3. South S.
4. N Highway
5. CC Highway
6. 14 Highway East
7. 14 Highway West
8. 65 Highway
9. Riverside Rd.
10. McCracken
11. W Highway
12. F Highway
13. JJ Highway
14. Fremont Hills
    a. Interlochen
    b. Winged Food Dr.

B. Nixa
1. Mt. Vernon
2. Highway 160
3. Nicholas Road
4. Gregg Road
5. Tracker Road
6. CC Highway
7. 14 Highway West
8. 14 Highway East
9. Northview St.
10. AA Highway

C. Billings
1. Highway 60
2. 14 Highway East
3. Pine St.
4. Mt. Vernon Rd.
5. Main St.
6. Jefferson Ave.
7. 14 Highway West

D. Clever
1. Public Ave.
2. Clarke St.
3. K Highway
4. Elm Ave.
5. 14 Highway East
6. 14 Highway West
7. P Highway
8. ZZ Highway
9. N Highway
10. M Highway

E. Sparta
1. Highway 14
2. Highway PP
3. Division St.
4. Highway 125
5. Highway DD
6. Highway Z

F. Highlandville
1. Highway 160
2. Highway EE
3. Glossip Ave.
4. Highlandville Rd.
5. Steinart Rd.
6. Highway OO
7. Highway HH
8. Highway V
9. Highway 176 East
10. Highway 176 West

G. Chadwick
1. Highway 125
2. Chadwick Rd.
3. Highway H
4. Fairview Rd.
5. Highway UU
6. Highway T

Attachment 7
Nursing Homes/Schools Checklist

1. Ozark
    a. Nursing Homes
        i. Ozark Nursing and Care Center
        ii. The Baptist Home
        iii. Century Pines
        iv. Ozarks Country Village
        v. Ozark Residential Care
        vi. Ozark Riverview Manor

    b. schools
        i. Ozark High School
        ii. Ozark Jr. High
        iii. Ozark South Elementary
        iv. Ozark North Elementary
        v. Ozark Upper Elementary
        vi. Ozark East Elementary

2. Nixa
    a. Nursing Homes
        i. Christian Health Care
        ii. Christian Residential Care
        iii. James River Lodge
        iv. Life Enhancement Village of the Ozarks
        v. Life Enhancement Village-Bldg 1 and 2
        vi. Nixa Residential Care Center
        vii. Noble Oaks Adult Care
        viii. Special Force Family Ministries

    b. Schools
        i. John Thomas Elementary
        ii. Nixa Jr. High
        iii. Nixa High
        iv. Matthews Elementary
        v. Espy Elementary
        vi. Century Elementary
        vii. Inman Elementary
        viii. Main St. Building
        ix. SCORE Building

3. Billings
    a. Nursing Homes
    b. Schools
        i. Billings Elementary
        ii. Billings High

4. Clever
    a. Nursing Homes
        i. Senior Citizens Housing (Elm St.)
    b. Schools
        i. Clever Elementary, Middle & High School
5. Highlandville
    a. Nursing Homes
    b. Schools
        i. Highlandville Elementary
6. Spokane
    a. Nursing Homes
    b. Schools
        i. Spokane Elementary
        ii. Spokane High
7. Sparta
    a. Nursing Homes
    b. Schools
        i. Sparta High
        ii. Sparta Elementary and Middle School
8. Chadwick
    a. Nursing Homes
    b. Schools
        i. Chadwick Schools

Attachment 8
DAMAGE ASSESSMENT REPORT FORM
RAPID ASSESSMENT SURVEY

Street: _____

City: _____ County: _____

Other description of Location _____

	Single Family	Mobile Homes	Multi-Family	Businesses	Totals
Destroyed					
Major					
Minor					
Inaccessible					
Total					

Infrastructure Damage: _____

Completed by: _____

Date: _____ Time: _____

Attachment 9
Glossary of terms

- **Debris Cloud** - A rotating "cloud" of dust or debris, near or on the ground, often appearing beneath a condensation funnel and surrounding the base of a tornado.
- **Doppler Radar** - Radar that can measure radial velocity, the instantaneous component of motion parallel to the radar beam
- **Downburst** - A strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.
- **Funnel Cloud** - A condensation funnel extending from the base of a towering cumulus or Cb, associated with a rotating column of air that is *not* in contact with the ground (and hence different from a tornado). A condensation funnel is a tornado, *not* a funnel cloud, if either a) it is in contact with the ground or b) a debris cloud or dust whirl is visible beneath it.
- **Fujita Scale** (or F Scale) - A scale of wind *damage* intensity in which wind speeds are inferred from an analysis of wind damage:
    - F0 (weak): 40- 72 mph, light damage.
    - F1 (weak): 73-112 mph, moderate damage.
    - F2 (strong): 113-157 mph, considerable damage.
    - F3 (strong): 158-206 mph, severe damage.
    - F4 (violent): 207-260 mph, devastating damage.
    - F5 (violent): 261-318 mph, (rare) incredible damage.

- **Gust Front** - The leading edge of gusty surface winds from thunderstorm downdrafts; sometimes associated with a shelf cloud or roll cloud.
- **Hazardous Weather Outlook** - Issued at least twice daily at 6 AM and 1 PM to alert you of potential weather hazards. An additional outlook is issued at 8:00pm is overnight storms are expected.
- **Hook** (or Hook Echo) - A radar reflectivity pattern characterized by a hook-shaped extension of a thunderstorm echo, usually in the right-rear part of the storm (relative to its direction of motion). A hook often is associated with a mesocyclone, and indicates favorable conditions for tornado development.
- **Instability** - The tendency for air parcels to accelerate when they are displaced from their original position; especially, the tendency to accelerate upward after being lifted. Instability is a prerequisite for severe weather - the greater the instability, the greater the potential for severe thunderstorms
- **Jet Stream** - Relatively strong winds concentrated in a narrow stream in the atmosphere, normally referring to horizontal, high-altitude winds. The position and orientation of jet streams vary from day to day. General weather patterns (hot/cold, wet/dry) are related closely to the position, strength and orientation of the jet stream (or jet streams). A jet stream at low levels is known as a low-level jet.
- **Mesocyclone** - A storm-scale region of rotation, typically around 2-6 miles in diameter and often found in the right rear flank of a supercell (or often on the eastern, or front, flank of an HP storm). The circulation of a mesocyclone covers an area much larger than the tornado that may develop within it.

- **Severe Thunderstorm** - A thunderstorm which produces tornadoes, hail 0.75 inches or more in diameter, or winds of 50 knots (58 mph) or more. Structural wind damage may imply the occurrence of a severe thunderstorm.
- **Severe Thunderstorm Watch**: A severe thunderstorm watch means that conditions are favorable for the development of severe thunderstorms within the watch area.
- **Severe Thunderstorm Warning**: A severe thunderstorm is approaching our area. Weather Service has determined that this storm is severe with damaging winds and large hail. Issued when severe weather (3/4" hail or larger and/or winds in excess of 58 mph) is imminent.
- **Squall Line** - A solid or nearly solid line or band of active thunderstorms.
- **Supercell** - A thunderstorm with a persistent rotating updraft. Supercells are rare, but are responsible for a remarkably high percentage of severe weather events - especially tornadoes, extremely large hail and damaging straight-line winds.
- **Tornado** - A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. A condensation funnel *does not need to reach to the ground* for a tornado to be present; a debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the total absence of a condensation funnel.
- **Tornado Watch**: A tornado watch means that conditions are favorable for the development of tornados within the watch area.
- **Tornado Warning**: The National Weather Service has will issue a Tornado warnings from any of the following criteria:
    - Weather Service sees rotation on Dopler Radar.
    - Weather Service gets a report from a trained Weather Spotter.
    - Reports of damage, actual sightings from citizens.
    - Or a combination of all the above.
- **Updraft** - A small-scale current of rising air. If the air is sufficiently moist, then the moisture condenses to become a cumulus cloud or an individual tower of a towering cumulus.
- **Wall Cloud** - A localized, persistent, often abrupt lowering from a rain-free base. Wall clouds can range from a fraction of a mile up to nearly five miles in diameter, and normally are found on the south or southwest (inflow) side of the thunderstorm. When seen from within several miles, many wall clouds exhibit rapid upward motion and cyclonic rotation. However, not all wall clouds rotate. Rotating wall clouds usually develop before strong or violent tornadoes, by anywhere from a few minutes up to nearly an hour. Wall clouds should be monitored visually for signs of *persistent, sustained* rotation and/or rapid vertical motion.

Appendix 5 to Annex B
Communications Interoperability Plan

I. PURPOSE

To implement a system in which all needed public safety, public works, and special emergency response agencies can effectively communicate with each other during emergencies in Christian County and potentially corresponding counties within the surrounding states.

Previous disasters have shown that there were not enough common radio channels available to be assigned to the several incidents that were taking place simultaneously. Many responding public safety agencies did not all have the same interoperable radio channels installed in their radios, thereby, preventing immediate and effective communication between the responding public safety agencies.

Christian County recognizes the need to be able to communicate effectively and immediately with all of its public safety, public works, and special emergency response agencies, as well as those agencies in other jurisdictions that may arrive to assist us.

Therefore, be it jointly resolved by all agencies in Christian County that the following Radio Interoperability Plan will be implemented and that all Christian County agencies will adhere to the guidelines herein set forth. Be it also agreed, that all Christian County agencies shall conform to and adopt the National Incident Management System in its entirety.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Whether natural or man made, Christian County has the potential to be faced with a large scale disaster that would require the response of multiple agencies.

2. Christian County has many different emergency response agencies within the county.

3. Mutual aid agreements are in place between most of the response agencies.

4. Christian County has 2 E-911 dispatch centers in the county. It is of the utmost importance that these agencies communicate and cooperate in regards to interoperability and frequency assignment.

5. The Christian County Emergency Operations Center (EOC) has the ability to communicate over Amateur Radio frequencies and has the ability to send and receive digital packet information.

6. Christian County Emergency Management has a pool of Amateur Radio Operators to assist in communication in the event of a large scale disaster. The county also has the ability to call upon amateur radio operators outside the county to assist if needed.

B. Assumptions

1. In the event of a large-scale emergency, the Incident Management System will be utilized.

2. All agencies will utilize the Unified Command concept.

3. The E-911 dispatch centers will cooperate on assigning interoperable channels.

III. CONCEPT OF OPERATIONS

A. General

1. During incidents that involve more than one agency, an interoperable radio channel or channels depending on the magnitude, should be requested by the incident commander or unified command structure at the scene.

2. The E-911 dispatch center will assign the frequency or frequencies. The dispatch center will keep track of assigned frequencies and relay that information to the other E-911 dispatch center.

3. One channel can be assigned to be used as the main communication channel between the Incident Command Post and the dispatch center. During the incident, this channel will be secured and only traffic between the ICP and the dispatch center will be allowed.

4. As the Incident expands, Amateur Radio Operators can be utilized. Once the EOC is activated, an amateur radio operator can be placed at the Incident Command Post to communicate directly with the EOC. Amateur radio operators can also be utilized to staff other sector areas including but limited to: staging area, shelter areas, mass distribution sites.

5. If there is not Amateur radio operator at the Command Post, the EOC is activated, and the IC is communicating with the dispatch center, the dispatch center will communicate with the EOC via a message system with message runners.

6. Under the Unified Command Concept, the leaders of each agency will be at the Command Post. A dedicated communications officer at the ICP should relay all traffic from the incident site to the dispatch center.

7. For incident operations, the dispatch center may, upon the request of the Incident Commander/Unified Command, assign additional channels. These channels will be used primarily for the different sectors assigned by the ICP. These channels for on-scene operations should be the V-Tach mutual aid channels supplied by the State of Missouri.

8. When an incident of significant magnitude occurs, it will be necessary for mutual aid companies to backfill out of service county agencies. When these mutual aid companies are requested, the dispatch center will need to assign a channel to these responding agencies as well. Generally, the channels that would be used in this case generally would be the Fire and Law Mutual Aid channels. If the outside responding agencies have the capability, other Christian County channels may be assigned if available.

9. If the outside responding agencies do not have the ability to communicate with Christian County agencies, an amateur radio operator will be assigned to their company. This amateur radio operator will be the communications link for that company on assignment in Christian County.

10. When a significant incident occurs, the County's Emergency Operations Center (EOC) will be activated. The EOC can assist in frequency designation.

B. Preparedness Activities

Activities that need to be undertaken by each agency and department to ensure an interoperable environment and state and federal compliance.

1. All county agencies need to have in place a plan to replace all obsolete radio equipment with narrow band capable equipment.

2. All radios should conform to the Office of Domestic Preparedness recommendations on channels and display. At a minimum, radios should have at least an 8 character alpha-numeric display and at least 16 channels.

3. In order to afford a better environment for interoperability, company officers radios should have increased capacity. Company officers should have radios with at least 32 channels. Company officers will generally be assigned as sector and branch commanders and will need the ability to communicate on a larger number of channels.

4. Company officers in each department and agency need to be fluent in the Incident Management System and the Unified Command System. Departments need to insure that they have an adequate training program to address these needs.

5. All Public Safety, Public Works, and Local Government Agencies must sign and abide by the Missouri SIEC Memorandum of Understanding (MOU) to be allowed the use of the state issued interoperable channels.

6. All Public Service and Special Emergency Response Agencies must sign and abide by the local jurisdictions Radio Interoperability Plan to be allowed the use of the state issued interoperable channels.

7. Public Service and Special Emergency Response Agencies must apply for permission to use the interoperable channels and be approved by the local jurisdiction authority or their designated representatives.

8. A channel plan will be implemented by each jurisdiction to attempt to make each radio usable by any person that needs to use it during an emergency. A standardized channel listing countywide is not practical. This can be, however, be accomplished by each individual department. All department radios should be programmed exactly the same.

9. The state interoperable channels are designated V-TAC 1, V- TAC 2, V- TAC 3, V- TAC 4, V-CALL and MTAC. Each department radio will have these channels programmed in to their radios in the same position. Use of these channels is subject to the terms and conditions noted above and the attached MOU and conditions for use (see attachment 1).

10. All Public Safety, Public Works, and Local Government Agencies will draft a policy/resolution adopting the Nation Incident Management System (NIMS).

11. Each dispatch center and EOC needs to develop a system/display board to keep track of channels issued and available.

IV. RESPONSIBILITIES

A. All Public Safety, Public Works, and Local Government Agencies

1. Apply for permission to use the interoperable channels and be approved by the local jurisdiction authority or their designated representatives

2. Must sign and abide by the Radio Interoperability Plan

3. Draft a policy/resolution adopting the Nation Incident Management System (NIMS).

4. Purchase radios that are narrow band capable and have a plan to replace all obsolete radios.

5. Implement an intra agency channel usage plan.

B. E-911 Dispatch Centers

1. Develop a system to track channel usage and availability in the event of a large scale emergency.

C. County Emergency Management Agency

1. Maintain an adequate EOC facility with Amateur radio equipment.

2. Maintain a list of Amateur radio volunteers and adequate call up lists and procedures to alert these personnel.

3. Initiate an annual review of this plan among all responding agencies.

4. Assist departments with IMS and Unified Command System training.

5. Ensure an adequate message system between the EOC and dispatch center.

Attachments:

1. Channel conditions of use
2. Interop Channel listing
3. State interoperability executive committee MOU

CONDITIONS FOR USE
FCC Designated Public Safety Interoperability Channels Below 512 MHz.

1. The frequencies shown above are available for assignment to Licensees under 47CFR90 to satisfy intermittent public safety incident response requirements. The frequencies are available on a shared basis and will not be authorized for the exclusive use of any one agency. Public Service entities may apply to the Missouri State interoperability Executive Committee on a case-by-case basis for permission to use these channels. Permission to access these VHF/UHF interoperability channels will only be granted to a public service entity when the application is to provide assistance and support to the public safety community in completing their mission. The Missouri SIEC recognizes the need for non-traditional responders to be integrated into incident management systems in order to operate in an effective manner. As such, local public safety entities may, through interlocal agreements, memoranda of understanding or other formalized contractual means, extend their use of these interoperability frequency resources to organizations with established relationships to facilitate emergency operations. Such organizations shall include Radio Amateur Civil Emergency Services (RACES) programs which are official units of and under the direct oversight of the governmental entity, American Radio Relay League (ARRL) sanctioned Amateur Radio Emergency Services (ARES) programs when acting in cooperation with and express approval of the governmental entity, Radio Emergency Associated Citizen's Teams (REACT) groups when acting in cooperation with and express approval of the governmental entity, locally organized search and rescue groups when acting in cooperation with and the express approval of the governmental entity, disaster relief organizations such as, but not limited, to the American Red Cross, Salvation Army Disaster Relief or other similar organizations who provide disaster relief or assistance. In all cases involving use by non-traditional responders, the governmental entity served shall be responsible for proper operation and control of communications equipment at all times, and shall take measures to insure operations abide by all applicable FCC Rules and Regulations.
In all cases, non-traditional responders shall comply with all FCC type acceptance requirements. Use of modified frequency agile VHF and/ or UHF amateur radio transceivers within this plan is not authorized.

2. Mobile stations are permitted to utilize these channels for official activities facilitating the operations of their agencies. In all cases, priority shall be afforded to any agency with immediate operational needs to mitigate high impact incidents that threaten life, property or the environment. No one discipline, jurisdiction, agency or essential support function has precedence over another and full cooperation must be afforded during joint operations. Unified command under the Incident Missouri State Interoperability Executive Committee Memorandum of Understanding, March 2003 2nd revision Management System shall be implemented. The agency in control of the incident, as determined in the local Emergency Operations Plan per specific incident type, shall assign channels for the duration of a defined operational period as required for incident support operations. During this period, no non-participating station within range of the incident may cause interference to the operation. Given adequate geographic separation, coordinated co-channel operations at separate incidents and venues may be conducted if ERP is maintained to the absolute minimum required to maintain reliable communications at each incident. All users must understand the shared nature of these frequencies. While coordination and pre-planning is conducted to reduce the possibility of operational interference, ultimately, professional courtesy and cooperation is necessary at a local level to eliminate any immediate conflicts.

3. Temporary Base stations are authorized, under the State of Missouri Callsign WPWV749. This authorization allows eligible entities to use up to 25 VHF temporary Base Stations and 25 UHF Temporary Repeaters throughout Missouri while operating in a Crisis or Consequence Management

environment. Eligible mobile stations, as defined in 47CFR90.20, are licensed through their agency's current Public Safety radio license in a blanket arrangement. In addition to the blanket eligibility, FCC Callsign WPWV749 also permits 1500 mobile/portable radios to operate on the VHF/UHF channels. The use of Fixed Base Stations is not currently authorized.

4. Initial contact shall be established using analog FM emission (11K2F3E). CTCSS will not be used on the calling channels to ensure access by stations from outside the normal area of operation.

5. Temporary Base stations are permitted, under authorization by Callsign WPWV749. The following restrictions apply: Temporary Base stations operating on TAC channels and the Missouri Common channel, "MTAC," must employ means to confine their signal to the minimum ERP necessary to support the intended use. Such means may include limited height, power output, antenna gain and antenna directional beam width.

> Suggested on scene parameters are:
> (a) Temporary Base Station equipment shall be limited to a maximum transmit antenna height of 6.1m, gain of 3.0 dBd and power output not to exceed 50 Watts measured at the antenna.
> (b) Temporary base stations (FBT), and Temporary mobile relays (FB2T), that are field deployed within the licensee's operational area - or are operating at an incident under mutual aid conditions - may employ as much elevation and ERP as necessary to effectively support the incident for the duration of the operational period. Such stations must not be left in permanent operation and must be dismantled upon cessation of the incident. Missouri State Interoperability Executive Committee Memorandum of Understanding, March 2003 2nd revision
> (c) Where permitted by Part 90, paired frequencies may be used for with temporary mobile relay facilities. Such mobile relay facilities shall employ CTCSS or NAC access and a time out timer limiting transmitter duration to no greater than 180 seconds (3 minutes).

6. In areas where RFI is a concern, CTCSS may be used on the TAC channels to mask interference. The standard region wide CTCSS shall be 156.7 Hz. All radio equipment in the region shall be programmed with CTCSS encoded on the transmit carrier whether the system operator intends for the equipment to be used in CTCSS or Carrier Squelch modes.
An example would be: VTAC1 - Rx 151.1375 CSQ/ Tx 151.1375 – 156.7 Hz.

7. Equipment, including temporary base stations, temporary control stations, mobiles and portables must be capable of toggled operation between CTCSS and Carrier Squelch mode if CTCSS has been employed as a means of reducing RFI. Should resources be brought in from outside of Region 24 for crisis or consequence management, it is likely these resources will not have the Region 24 CTCSS tone in their equipment. Deactivation of CTCSS on receivers would be necessary for these resources to participate under a unified command environment. It is anticipated the VHF simplex channels and UHF channel pairs listed above will be utilized in an Incident Management System/Incident Command System environment, with channel use assignment being made at the scene after the incident commander or designee determine the most efficient channel allotment to effect safety of life and property issues. By entering into an Memorandum of Understanding (MOU), the applicant certifies that their personnel, field, command and telecommunicators, has acknowledged the Incident Command System/Incident Management System concept of command structure, the characteristics associated with it and will implement same at such time use of the interoperability channels is required. It is conceivable that some equipment in Region 24, operating under blanket licensing by the FCC, will be released into field operation without the Region 24 CTCSS and would require the user who employs CTCSS for RFI

masking to employ Carrier Squelch to achieve interoperability. Momentary monitoring, such as that employed on non-exclusive frequencies (de - centralized trunking) to satisfy FCC requirements of listening for other use before transmitting is considered inadequate for the purposes of satisfying this condition for use. Should CTCSS be employed on TAC channels as an RFI masking solution, the applicant will provide an attachment addressed to Region 24 certifying all radio operators, including Telecommunicators and field response personnel: Missouri State Interoperability Executive Committee Memorandum of Understanding, March 2003 2nd revision

(a) Have been trained in the differences between CTCSS and Carrier Squelch modes of operation,

(b) Have understanding that resources outside of Region 24 may not use the Region 24 CTCSS tone, and,

(c) Can demonstrate competent practical motor skills in reconfiguring their equipment so that it operates in Carrier Squelch receive mode for the operational period of the incident. Coordination will not be granted until this condition is satisfied.

8. Use of any CTCSS to mask co-channel operation by another authorized user is not permitted.

9. In cases where CTCSS is necessary to mask RFI and the RFI contains a component that breaks through the specified Region 24 CTCSS, an alternate CTCSS tone or CDCSS code may be specified on a case-by-case basis. Additional CTCSS tones and CDCSS codes shall be assigned only after approval of the Missouri SIEC and shall not be changed by the individual agency or the agency's communications vendor. In all cases, the equipment shall contain the capability to revert to Carrier Squelch operation as specified under Condition 7 of this section.

10. Digital modes are authorized on TAC channels after July 1, 2004 to allow adjacent wideband channel users time to migrate to narrowband operation. Digital format shall be "Project 25" Phase I compliant with a network access code of $293. The implementation of additional Network Access Codes is not permitted. Radios programmed in digital operation should also be capable of operation in analog FM as specified in Conditions 4 and 6 of this section.

11. In order to alleviate confusion, standard mnemonics shall be used in all equipment to refer to individual channels. These are listed in the table above. Should the equipment not be capable of alphanumeric channel mnemonics, the radio should be placarded to indicate the channel mnemonic and its corresponding position on the radio's selector switch.

12. All stations not operating in mobile relay mode, where permitted, shall employ a time out timer set to limit transmission duration to a period of no greater than 60 seconds (1 minute).

13. All stations operating in mobile relay mode, where permitted, shall be configured to immediately drop transmit carrier upon cessation of input signal. Reasonable hysteresis time in squelching action of weak received signals, or in signals that have achieved a critical bit error rate (BER), is permitted. Prolonged "hang time" in excess of 500 ms is not permitted.

14. Alert paging and SCADA operations are not permitted on Calling or TAC channels. Temporary base station receivers shall not be muted by either selective calling alert mechanisms or DTMF signaling devices.

15. As a condition of coordination, the applicant will understand that in the time period up to January 1, 2005, adjacent channel users operating in 20 kHz channel width (wideband) are co-primary. The potential exists for interference from and with incumbent adjacent channel users. Per FCC limitations, after January 1, 2005, adjacent channel wideband operations will become secondary to proper interoperability traffic on the above listed channels.

16. The State of Missouri will offer frequency 154.680 MHz as a multi-discipline, multi-agency public safety common channel to all public safety agencies and other approved entities who adhere and sign the above Memorandum of Understanding with the Missouri State Interoperability Executive Committee (SIEC). The channel will be referred to as the MTAC channel. The operating parameters for this frequency are listed below: The statewide channel, 154.680 MHz, will have a designated CTCSS tone of 156.7 Hz. The guidelines established in sections 6,7,8 and 9 above will be used when implementing the MTAC channel. It will be utilized as an on-scene communication *"Common Channel"*, to promote interaction and coordination between agencies in areas as Incident Management/Incident Command is being implemented. It will be used as a "Mobile Only/Fixed Base Temporary" frequency, but will have the same FBT restrictions as listed in Section 5 above. With the exception of Section 4 (bandwidth limitation), the operational guidelines established for the VTAC/UTAC channels will apply to the "MTAC" channel. The Missouri Common Channel will be utilized with a bandwidth of 20K until June 30, 2005. Effective July 1, 2005, the common channel will use an emission designator no greater than 11K. The Missouri Common Channel will be referred to as "MTAC" while being used in plain voice inter-discipline/inter-agency communications. Frequency 154.680 MHz will be operated under a license held by the State of Missouri under callsign KA5824. There will be no individual agency licensing of this frequency. The Memorandum of Understanding (MOU) that each agency adheres to will be the standing agreement between the Missouri State Interoperability Executive Committee and the user agency. This agreement can be revoked if voted on and approved by a majority of the Missouri State Interoperability Executive Committee at either a special or general meeting.

Frequency MHz	Mnemonic	RX CTCSS	TX CTCSS	P25 NAC
155.7525 (nb)	**VCALL**	**CSQ**	**CSQ**	**Not Auth.**
151.1375 (nb)	**VTAC 1**	**156.7 and/or CSQ**	**156.7**	**$293**
154.4525 (nb)	**VTAC 2**	**156.7 and/or CSQ**	**156.7**	**$293**
158.7375 (nb)	**VTAC 3**	**156.7 and/or CSQ**	**156.7**	**$293**
159.4725 (nb)	**VTAC 4**	**156.7 and/or CSQ**	**156.7**	**$293**
154.680 (wb)	**MTAC**	**156.7**	**156.7**	**Not Auth.**
155.475 (wb)	**Law MA**	**Not Auth.**	**Not Auth.**	**Not Auth.**
154.280 (wb)	**Fire MA**	**Not Auth.**	**Not Auth.**	**Not Auth.**

SUBJECT: Memorandum of Understanding for agencies to operate FCC designated VHF/UHF multi-discipline interoperability channels in accordance with Missouri State Interoperability Executive Committee guidelines:

This memorandum of understanding (hereafter referred to as MOU) shall be submitted by _____ (hereafter referred to as APPLICANT) representing a public safety agency indicating compliance and agreement with the attached operational and technical guidelines for the use of the FCC designated VHF/UHF multidiscipline interoperability channels. By virtue of signing and submitting this MOU, APPLICANT affirms its willingness to comply with the proper operation of the interoperability channels as dictated by the Missouri State Interoperability Executive Committee (SIEC).

The APPLICANT shall abide by the conditions of this MOU, which are as follows:

- To operate by all applicable Federal, State, County, and City laws/ordinances.
- To utilize "plain language" for all transmissions.
- To monitor the Calling Channel(s) at an incident and coordinate the use of the Tactical Channels.
- To identify inappropriate use and mitigate the same from occurring in the future.
- To mitigate contention for channels by exercising the Priority Levels identified in this MOU.
- To share channels between all qualified public safety entities without respect to discipline and not monopolize the use of any channel.

The preceding conditions are some of the primary requirements for operation of these interoperability channels. They are not a complete list and applicants are referred to the complete SIEC guidelines (attached) for the complete list of operational and technical requirements.

The applicant agency will use these interoperability channels with _____ (number of mobile/portable units) and will notify the Missouri State Interoperability Executive Committee if the number of radios programmed increases by more than 10% of the number of units listed above.

Priority Levels:
1. Disaster or extreme emergency operation for mutual aid and inter-agency communications;
2. Emergency or urgent operation involving imminent danger to life or property;
3. Special event control, generally of a preplanned nature (including Task Force operations)
4. Joint training evolutions (these channels do not qualify for use by single agencies for their secondary communications purposes)

To resolve contention within the same priority, assuming all radio equipment is exercising the lowest output and effective radiated power level practicable, the channel should go to the organization with the wider span of control/authority. This shall be determined by the SIEC for the operation or by the levels of authority/government identified in the contention. For clarification purposes, and as an aid to facilitate inter-agency on scene communications, any fixed base or mobile relay stations utilized for temporary locations (FCC station class FBT or FB2T, respectively), shall, in order to be consistent with SIEC guidelines, utilize power levels sufficient to effect the necessary operation.

Federal agencies are permitted access to interoperability channels only as authorized by 47 CFR 2.102 (c) & 2.103 and Part 7.12 of the NTIA Manual. Federal agencies must also adhere to the operating parameters established in the attached SIEC guidelines.

Any violation of this MOU or FCC Rule shall be addressed immediately. The first level of resolution escalation shall be between the parties involved, next the SIEC, and finally the FCC.

_____ _____

Chairperson, Date
Missouri State Interoperability Executive Committee

_____ _____

Applicant/Agency Date